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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CALLAWAY, JADE R

ART UNIT

PAPER NUMBER

2872

NOTIFICATION DATE

DELIVERY MODE

05/26/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/594,945	Applicant(s) OGASAWARA, MASAKAZU	
	Examiner JADE R. CALLAWAY	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/11/10, 4/27/10, 4/28/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 6-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/28/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 2/11/10 and 4/27/10 have been entered.

Response to Amendment

2. The amendments to the claims, in the submissions dated 2/11/10 and 4/27/10, are acknowledged and accepted.

Response to Arguments

3. Applicant's arguments filed 2/11/10 and 4/27/10 have been fully considered but they are not persuasive. Applicants argue that the prior art cited does not teach or reasonably suggest that "the two dimensional recording layer senses a second light beam so that a mark is recorded according to change of the physical property, and wherein the recorded mark of the two-dimensional recording layer includes information for a servo control." The Examiner respectfully disagrees. Ueda et al. is directed to a hologram recording sheet that comprises two hologram sensitive material layers, sensitive to two different wavelengths (see figure 12; col. 9, line 39 to col. 10, line 41). Since the hologram recording sheet of Ueda et al. senses two beams, first and second marks will be recorded according to a change of the physical property of the recording

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medium. Hays et al. is directed to a hologram record carrier that includes servo blocks (i.e. information for a servo control) that are recorded on a two-dimensional recording layer (see figures 2-3; col. 4, lines 37-64). Additionally, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Ueda et al. and Hays et al. to have a two-dimensional recording layer, sensitive to two light beams, wherein a recorded mark includes information for a servo control, so that feedback information can be recorded and replayed in a holographic medium. Further, the recorded position feedback information can be used to adjust the reference beam to maximize the signal to noise ratio by reducing cross talk, thereby improving storage capacity.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3 and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keshner et al. (6,310,844) in view of Ueda et al. (7,132,200) and Hays et al. (5,777,760).

Consider claim 1, Keshner et al disclose (e.g. figure 1) a record carrier having a substrate (114, reference layer) and a reflective layer (115, reflective coating), wherein recording or reproducing of information is performed by light irradiation, characterized by comprising: a two-dimensional recording layer (106, data layer) whose physical

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property changes in response to light intensity [col. 4, line 31 to col. 5, line 15].

However, Keshner et al. do not disclose that the recording layer comprises two layers wherein one of the layers is a holographic recording layer that reserves an optical interference pattern comprising components of reference light and signal light as a diffractive grating therein; wherein the optical interference pattern is produced by a first light beam so that a hologram is recorded, and the two-dimensional recording layer senses a second light beam so that a mark is recorded according to change of the physical property, and wherein the recorded mark of the two-dimensional recording layer includes information for a servo control. Keshner et al. and Ueda et al. are related as recording devices. Ueda et al. teach (e.g. figures 12-13) a holographic recording layer that comprises a layer (e.g. 52, holographic sensitive material) that reserves an optical interference pattern comprising components of coherent reference light and signal light as a diffractive grating therein; wherein the optical interference pattern is produced by a first light beam (e.g. green light) so that a hologram is recorded. Ueda et al. also disclose a two-dimensional recording layer (53, holographic sensitive material) that senses a second light beam (e.g. red light) so that a mark is recorded according to change of the physical property [col. 9 line 39 to col. 10, line 41]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Keshner et al. to have different recording substrates, as taught by Ueda et al., so that a multiple color holographic display can be formed at a low cost.

However, the Keshner et al. and Ueda et al. do not specifically disclose that the recorded mark of the two-dimensional recording layer includes information for a servo

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control. Keshner et al., Ueda et al., and Hays et al. are related as holographic recording devices. Hays et al. teach (e.g. figures 2-3) a hologram record carrier includes servo blocks (i.e. information for a servo control) that are recorded on a two-dimensional recording layer (38, crystal) [col. 4, lines 37-64]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Keshner et al., Ueda et al. and Hays et al. to have a two-dimensional recording layer, sensitive to two light beams, wherein a recorded mark includes information for a servo control, so that feedback information can be recorded and replayed in a holographic medium. Further, the recorded position feedback information can be used to adjust the reference beam to maximize the signal to noise ratio by reducing cross talk, thereby improving storage capacity.

Consider claim 3, the modified Keshner et al. reference discloses (e.g. figures 12-13 of Ueda et al.) a hologram record carrier wherein the holographic recording layer (52, holographic sensitive material) has a sensitivity to a wavelength of the first light beam (green light beam), and the two-dimensional recording layer (e.g. 52 of Ueda et al.) is a pigmented coat [col. 8, lines 42-67, col. 10, lines 45-61]. However, the modified Keshner et al. reference does not disclose that the wavelength of the first light beam is higher than the wavelength of the second light beam. Note that the Court has held that shifting the location of an element is obvious; see **In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)** and **In re Kuhle, 526 F.2d 553, 188 USPQ (CCPA 1975)**. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to shift the location of the holographic recording layers so that the layer

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sensitive to red light was the first layer and the layer sensitive to green light was the second layer, since it has been held that a mere rearrangement of an element without modification of the operation of the device involves only routine skill in the art. Further, one would have been motivated to rearrange the layers in order to have a different primary color be dominant in the holographic display.

Consider claims 6-8, the modified Keshner et al. reference does not disclose a hologram record carrier wherein an end mark, address mark or relational mark indicating an end of a hologram, address of a hologram, information relating to a hologram is recorded on the holographic recording layer at a portion of the two-dimensional recording layer laminated on a portion of the holographic recording layer with the hologram group or group of holograms. Keshner et al., Ueda et al., and Hays et al. are related as recording devices. Hays et al. teaches (e.g. figures 2-3) a hologram record carrier that includes servo blocks (relational marks) recorded on a two-dimensional recording layer carrying information relating to a hologram on a holographic layer [col. 4, lines 4-11, col. 4, line 65 to col. 5, line 15]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of the modified Keshner et al. reference, as taught by Hays et al., so that position feedback information can be recorded and replayed in a holographic medium. Official Notice is taken. Although Hays et al. does not specifically disclose that the servo blocks could be end marks indicating an end of a hologram, an address mark indicating an address of a hologram; it is well known that servo blocks provide feedback to help control mechanical position or other parameters. End marks and address marks are

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examples of various parameters that can be recorded in the medium so that feedback can be provided to control mechanical position of the optical device. Further, one of ordinary skill in the art at the time the invention was made would have been motivated to have the servo blocks contain information relating to end marks and address marks so that the position of the optical disk can be controlled to record/reproduce high quality holograms.

Consider claim 9, the modified Keshner et al. reference discloses (e.g. figures 2 and 4 of Keshner et al.) a hologram record carrier wherein the reflective layer (115, reflective coating) has tracks (200, spiral tracks) extending such that they separate from each other without crossing one another for tracking a spot of the light beam that passes from an objective lens (118, objective lens) through the holographic recording layer and the two-dimensional recording layer to be focused [col. 6, lines 22-40 of Keshner et al.].

Consider claim 10, the modified Keshner et al. reference discloses (e.g. figures 2 and 4 of Keshner et al.) a hologram record carrier wherein the tracks (200, spiral tracks) are formed spirally.

Consider claim 11, the modified Keshner et al. reference discloses (e.g. figures 2 and 4 of Keshner et al.) a hologram record carrier wherein the tracks are formed in parallel (the tracks do not intersect).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JADE R. CALLAWAY whose telephone number is

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(571)272-8199. The examiner can normally be reached on Monday to Friday 6:00 am - 3:30 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRC
/JADE R. CALLAWAY/
Examiner, Art Unit 2872

/Stephone B. Allen/
Supervisory Patent Examiner
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